

**APPENDIX B**

D

## Blast Result

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## Blast 2 Sequences results

PubMed

Entrez

BLAST

OMIM

Taxonomy

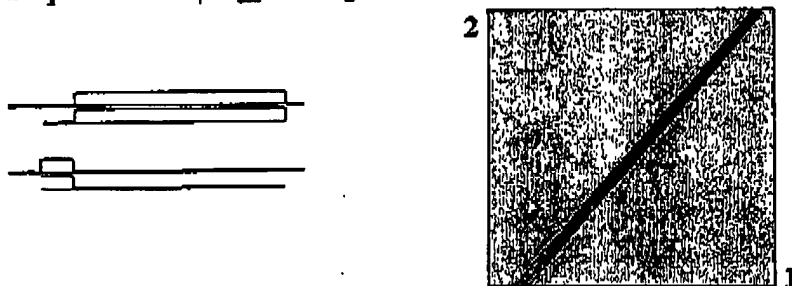
Structure

## BLAST 2 SEQUENCES RESULTS VERSION BLASTN 2.2.4 [Aug-26-2002]

Match:  Mismatch:  gap open:  gap extension:   
 x\_dropoff:  expect:  wordsize:  Filter ☐

Sequence 1 lcl|seq\_1 Length 6308 (1 .. 6308)

Sequence 2 lcl|seq\_2 Length 5205 (1 .. 5205)



NOTE: The statistics (bitscore and expect value) is calculated based on the size of nr database

NOTE: If protein translation is reversed, please repeat the search with reverse strand of the query sequence

Score = 8715 bits (4527), Expect = 0.0  
 Identities = 4529/4530 (99%)  
 Strand = Plus / Plus

Query: 1416 gtcataacagcctacaaagagotottga ctgtgagctcgcagaggcccagttgcatacc 1475  
 |||||  
 Sbjct: 676 gtcataacagcctacaaagagotottga ctgtgagctcgcagaggcccagttgcatacc 735

Query: 1476 actgccattgacaaagagggtcgctgggc tgttaaagcgggagcttatgctgcttgccag 1535  
 |||||  
 Sbjct: 736 actgccattgacaaagagggtcgctgggc tgttaaagcgggagcttatgctgcttgccag 795

Query: 1536 gaagcaaaggaagatataaagagtcattc agaaaatgtctctcaacatccacttcattgta 1595  
 |||||  
 Sbjct: 796 gaagcaaaggaagatataaagagtcattc agaaaatgtctctcaacatccacttcattgta 855

Query: 1596 gaagtattacactcagagattatggctca tcagaaatttgctttgctgcttgggttcctgg 1655  
 |||||  
 Sbjct: 856 gaagtattacactcagagattatggctca tcagaaatttgctttgctgcttgggttcctgg 915

Query: 1656 atgaacaaaattatgagctattcaagtga ctttaggcagatcttttgccaagcatgcctt 1715  
 |||||  
 Sbjct: 916 atgaacaaaattatgagctattcaagtga ctttaggcagatcttttgccaagcatgcctt 975

## Blast Result

Query: 1716 agagaagaacctgactcggagaatccctg tctcataagcagggttaatgctttgggatgca 1775  
|||||  
Sbjct: 976 agagaagaacctgactcggagaatccctg tctcataagcagggttaatgctttgggatgca 1035

Query: 1776 aagctttataaagggtgcccgtaagatcct tcatgaattgatcttcagcagtttttttatg 1835  
|||||  
Sbjct: 1036 aagctttataaagggtgcccgtaagatcct tcatgaattgatcttcagcagtttttttatg 1095

Query: 1836 gagatggaatacaaaaaactctttgctat ggaatttgtgaagtattataaacaactgcag 1895  
|||||  
Sbjct: 1096 gagatggaatacaaaaaactctttgctat ggaatttgtgaagtattataaacaactgcag 1155

Query: 1896 aaagaatatatcagtgatgatcatgacag aagtatctctataactgcactttcagttcag 1955  
|||||  
Sbjct: 1156 aaagaatatatcagtgatgatcatgacag aagtatctctataactgcactttcagttcag 1215

Query: 1956 atgtttactgttctactctgggtcgaca tcttattgaagagcagaatgttatctctgtc 2015  
|||||  
Sbjct: 1216 atgtttactgttctactctgggtcgaca tcttattgaagagcagaatgttatctctgtc 1275

Query: 2016 attactgaaactctgctagaagttttacc tgagtacttggacaggaacaataaattcaac 2075  
|||||  
Sbjct: 1276 attactgaaactctgctagaagttttacc tgagtacttggacaggaacaataaattcaac 1335

Query: 2076 ttccagggttatagccaggacaaattggg aagagtatatgcagtaatatgtgacctaaag 2135  
|||||  
Sbjct: 1336 ttccagggttatagccaggacaaattggg aagagtatatgcagtaatatgtgacctaaag 1395

Query: 2136 tatatcctgatcagcaaacccacaatatg gacagaaagattaagaatgcagttccttgaa 2195  
|||||  
Sbjct: 1396 tatatcctgatcagcaaacccacaatatg gacagaaagattaagaatgcagttccttgaa 1455

Query: 2196 ggttttcgatcttttttgaagattcttac ctgtatgcaggggaatggaagaaatccgaaga 2255  
|||||  
Sbjct: 1456 ggttttcgatcttttttgaagattcttac ctgtatgcaggggaatggaagaaatccgaaga 1515

Query: 2256 caggttgggcaacacattgaagtggatcc tgattgggagggtgccattgctatacagatg 2315  
|||||  
Sbjct: 1516 caggttgggcaacacattgaagtggatcc tgattgggagggtgccattgctatacagatg 1575

Query: 2316 caattgaagaatattttactcatgttcca agagtgggtgtgcttgtgatgaagaactctta 2375  
|||||  
Sbjct: 1576 caattgaagaatattttactcatgttcca agagtgggtgtgcttgtgatgaagaactctta 1635

Query: 2376 cttgtggcttataaagaatgtcacaaagc tgtgatgagggtgcagtagcagtttcatatct 2435  
|||||  
Sbjct: 1636 cttgtggcttataaagaatgtcacaaagc tgtgatgagggtgcagtagcagtttcatatct 1695

Query: 2436 agtagcaagacagtagtacaatcgtgtgg acatagtttggaaacaaagtcctacagagta 2495  
|||||

## Blast Result

Sbjct: 1696 agtagcaagacagtagtacaatcgtgtgg acatagtttggaaacaaagtoctacagagta 1755

Query: 2496 tctgaggatcttctaagcatacatctgcc actctctaggacccttgctgggtcttcatgta 2555  
|||||  
Sbjct: 1756 tctgaggatcttctaagcatacatctgcc actctctaggacccttgctgggtcttcatgta 1815

Query: 2556 cgtttaagcagggtgggtgctgtttcaag actgcatgaatttgtgtcttttgaggacttt 2615  
|||||  
Sbjct: 1816 cgtttaagcagggtgggtgctgtttcaag actgcatgaatttgtgtcttttgaggacttt 1875

Query: 2616 caagtagaggtactagtggaaatatccttt acgttgctctgggtgttggttgcccagggtgtt 2675  
|||||  
Sbjct: 1876 caagtagaggtactagtggaaatatccttt acgttgctctgggtgttggttgcccagggtgtt 1935

Query: 2676 gctgagatgtggcgaagaaatggactgtc tottattagccagggtgtttattaccaagat 2735  
|||||  
Sbjct: 1936 gctgagatgtggcgaagaaatggactgtc tottattagccagggtgtttattaccaagat 1995

Query: 2736 gttaagtgacagagaagaaatgtatgataa agatatcatcatgcttcagattgggtgcatct 2795  
|||||  
Sbjct: 1996 gttaagtgacagagaagaaatgtatgataa agatatcatcatgcttcagattgggtgcatct 2055

Query: 2796 ttaatggatcccaataagttcttgttact ggtacttcagagggtatgaacttgccgagggt 2855  
|||||  
Sbjct: 2056 ttaatggatcccaataagttcttgttact ggtacttcagagggtatgaacttgccgagggt 2115

Query: 2856 ttttaacaagaccatatctacaaaagacca ggatttgattaaacaatatataactaata 2915  
|||||  
Sbjct: 2116 ttttaacaagaccatatctacaaaagacca ggatttgattaaacaatatataactaata 2175

Query: 2916 gaagaaatgcttcagggtcctcatctatat tgtgggtgagcggttatgtacctggagtggga 2975  
|||||  
Sbjct: 2176 gaagaaatgcttcagggtcctcatctatat tgtgggtgagcggttatgtacctggagtggga 2235

Query: 2976 aatgtgaccaaagaagagggtcacatgag agaaatcattcacttgctttgcattgaaccc 3035  
|||||  
Sbjct: 2236 aatgtgaccaaagaagagggtcacatgag agaaatcattcacttgctttgcattgaaccc 2295

Query: 3036 atgccacacagtgcattgccccaaaattt acctgagaatgaaaataatgaaactggctta 3095  
|||||  
Sbjct: 2296 atgccacacagtgcattgccccaaaattt acctgagaatgaaaataatgaaactggctta 2355

Query: 3096 gagaatgtcataaacaagtggtccacatt taagaaaccagggtgtatcaggccatggagt 3155  
|||||  
Sbjct: 2356 gagaatgtcataaacaagtggtccacatt taagaaaccagggtgtatcaggccatggagt 2415

Query: 3156 tatgaactaaaagatgaatcactgaaaga cttcaatatgtacttttatcattactccaaa 3215  
|||||  
Sbjct: 2416 tatgaactaaaagatgaatcactgaaaga cttcaatatgtacttttatcattactccaaa 2475

## Blast Result

Query: 3216 acccagcatagcaaggctgaacatatgca gaagaaaaggagaaaacaagaaaacaaagat 3275  
|||||  
Sbjct: 2476 acccagcatagcaaggctgaacatatgca gaagaaaaggagaaaacaagaaaacaaagat 2535

Query: 3276 gaagcattgccgccaccaccacacctcctga attctgccctgctttcagcaaagtgattaac 3335  
|||||  
Sbjct: 2536 gaagcattgccgccaccaccacacctcctga attctgccctgctttcagcaaagtgattaac 2595

Query: 3336 ottctcaactgtgatcatgatgtacat tctcaggaccgtatttgagcgggcaatagac 3395  
|||||  
Sbjct: 2596 ottctcaactgtgatcatgatgtacat tctcaggaccgtatttgagcgggcaatagac 2655

Query: 3396 acagattctaacttgtggaccgaagggat gctccaaatggcttttcatttctggcattg 3455  
|||||  
Sbjct: 2656 acagattctaacttgtggaccgaagggat gctccaaatggcttttcatttctggcattg 2715

Query: 3456 ggtttactagaagagaagcaacagcttca aaaagctcctgaagaagaagtaacatttgac 3515  
|||||  
Sbjct: 2716 ggtttactagaagagaagcaacagcttca aaaagctcctgaagaagaagtaacatttgac 2775

Query: 3516 ttttatcataaggcttcaagattgggaag ttcagccatgaatatacaaatgcttttggaa 3575  
|||||  
Sbjct: 2776 ttttatcataaggcttcaagattgggaag ttcagccatgaatatacaaatgcttttggaa 2835

Query: 3576 aaactcaaaggaattccccagttagaagg ccagaaggacatgataacgtggataacttcag 3635  
|||||  
Sbjct: 2836 aaactcaaaggaattccccagttagaagg ccagaaggacatgataacgtggataacttcag 2895

Query: 3636 atgtttgacacagtgaagcgattaagaga aaaatcttggtttaattgtagcaaccacatca 3695  
|||||  
Sbjct: 2896 atgtttgacacagtgaagcgattaagaga aaaatcttggtttaattgtagcaaccacatca 2955

Query: 3696 ggatcgggaatctattaagaatgatgagat tactcatgataaagaaaaagcagaacgaaaa 3755  
|||||  
Sbjct: 2956 ggatcgggaatctattaagaatgatgagat tactcatgataaagaaaaagcagaacgaaaa 3015

Query: 3756 agaaaagctgaagctgctaggctacatcg ccagaagatcatggctcagatgtctgcctta 3815  
|||||  
Sbjct: 3016 agaaaagctgaagctgctaggctacatcg ccagaagatcatggctcagatgtctgcctta 3075

Query: 3816 cagaaaaaacttcattgaaactcataaact catgtatgacaatacatcagaaatgcctggg 3875  
|||||  
Sbjct: 3076 cagaaaaaacttcattgaaactcataaact catgtatgacaatacatcagaaatgcctggg 3135

Query: 3876 aaagaagattccattatggaggaagagag caccocagcagtcagtgactactctagaatt 3935  
|||||  
Sbjct: 3136 aaagaagattccattatggaggaagagag caccocagcagtcagtgactactctagaatt 3195

Query: 3936 gctttgggtcctaaccgggggtccatctgt tactgaaaaggaggtgctgacgtgcatcctt 3995  
|||||  
Sbjct: 3196 gctttgggtcctaaccgggggtccatctgt tactgaaaaggaggtgctgacgtgcatcctt 3255

Query: 3996 tgccaagaagaacaggaggtgaaaataga aaataatgccatggtattatcggcctgtgtc 4055  
|||||  
Sbjct: 3256 tgccaagaagaacaggaggtgaaaataga aaataatgccatggtattatcggcctgtgtc 3315

Query: 4056 cagaaatctactgccttaaccagcacag gggaaaacccatagaactctcaggagaagcc 4115  
|||||  
Sbjct: 3316 cagaaatctactgccttaaccagcacag gggaaaacccatagaactctcaggagaagcc 3375

Query: 4116 ctagaccacttttcatggatccagactt ggcatatggaacttatacaggaagctgtggt 4175  
|||||  
Sbjct: 3376 ctagaccacttttcatggatccagactt ggcatatggaacttatacaggaagctgtggt 3435

Query: 4176 catgtaatgcacgcagtgtgctggcagaa gtattttgaagctgtacagctgagctctcag 4235  
|||||  
Sbjct: 3436 catgtaatgcacgcagtgtgctggcagaa gtattttgaagctgtacagctgagctctcag 3495

Query: 4236 cagcgcattcatgttgacctttttgactt ggaaagtggagaatatctttgccctctttgc 4295  
|||||  
Sbjct: 3496 cagcgcattcatgttgacctttttgactt ggaaagtggagaatatctttgccctctttgc 3555

Query: 4296 aaatctctgtgcaataactgtgatcccat tattcctttgcaacctcaaaagataaacagt 4355  
|||||  
Sbjct: 3556 aaatctctgtgcaataactgtgatcccat tattcctttgcaacctcaaaagataaacagt 3615

Query: 4356 gagaatgcagatgctcttgctcaactttt gaccctggcacggtggatacagactgttctg 4415  
|||||  
Sbjct: 3616 gagaatgcagatgctcttgctcaactttt gaccctggcacggtggatacagactgttctg 3675

Query: 4416 gccagaatatcaggttataatataagaca tgctaaaggagaaaaccaattcctattttc 4475  
|||||  
Sbjct: 3676 gccagaatatcaggttataatataagaca tgctaaaggagaaaaccaattcctattttc 3735

Query: 4476 tttaatcaagggaatgggagattctacttt ggagttccattccatcctgagttttggcgtt 4535  
|||||  
Sbjct: 3736 tttaatcaagggaatgggagattctacttt ggagttccattccatcctgagttttggcgtt 3795

Query: 4536 gagtcttcgattaaatattcaaatagcat caaggaaatgggtattctctttgccacaaca 4595  
|||||  
Sbjct: 3796 gagtcttcgattaaatattcaaatagcat caaggaaatgggtattctctttgccacaaca 3855

Query: 4596 atttatagaattggattgaaagtgccacc tgatgaaagggatcctcgagtcctccatgctg 4655  
|||||  
Sbjct: 3856 atttatagaattggattgaaagtgccacc tgatgaaagggatcctcgagtcctccatgctg 3915

Query: 4656 acctggagcacctgcgctttcactatcca ggcaattgaaaatctattgggagatgaagga 4715  
|||||  
Sbjct: 3916 acctggagcacctgcgctttcactatcca ggcaattgaaaatctattgggagatgaagga 3975

Query: 4716 aaacctctgtttggagcaacttcaaaatag gcagcataatggtctgaaagcattaatgcag 4775

## Blast Result

|||||  
Sbjct: 3976 aaacctctgtttggagcacttcaaaatag gcagcataatgggtctgaaagcattaatgcag 4035

Query: 4776 tttgcagttgcacagaggattacctgtcc tcaggtcctgatacagaaacatctgggtcgt 4835  
|||||  
Sbjct: 4036 tttgcagttgcacagaggattacctgtcc tcaggtcctgatacagaaacatctgggtcgt 4095

Query: 4836 cttctatcagttgtttcttccataacataaa atcagaagatacaccatgccttctgtctata 4895  
|||||  
Sbjct: 4096 cttctatcagttgtttcttccataacataaa atcagaagatacaccatgccttctgtctata 4155

Query: 4896 gatctgtttcatgttttgggtgggtgctgt gtttagcattcccatccttgtattgggatgac 4955  
|||||  
Sbjct: 4156 gatctgtttcatgttttgggtgggtgctgt gtttagcattcccatccttgtattgggatgac 4215

Query: 4956 cctggtgatctgcagccttcttccagttag ttcttccctataaccacotttatctcttccat 5015  
|||||  
Sbjct: 4216 cctggtgatctgcagccttcttccagttag ttcttccctataaccacotttatctcttccat 4275

Query: 5016 ttgatcaccatggcacacatgcttcagat actacttacagtagacacaggcctaccctt 5075  
|||||  
Sbjct: 4276 ttgatcaccatggcacacatgcttcagat actacttacagtagacacaggcctaccctt 4335

Query: 5076 gctcaggttcaagaagacagtgaagagge tcattccgcatcttctttctttgcagaaatt 5135  
|||||  
Sbjct: 4336 gctcaggttcaagaagacagtgaagagge tcattccgcatcttctttctttgcagaaatt 4395

Query: 5136 tctcaatatacaagtgggtccattgggtg tgatattcctggctgggtatttgtgggtctca 5195  
|||||  
Sbjct: 4396 tctcaatatacaagtgggtccattgggtg tgatattcctggctgggtatttgtgggtctca 4455

Query: 5196 ctgaagaatggcatcacccttatcttctg ctgtgctgcattgttttccactatttactt 5255  
|||||  
Sbjct: 4456 ctgaagaatggcatcacccttatcttctg ctgtgctgcattgttttccactatttactt 4515

Query: 5256 ggggtaactccgctgaggaactgcatac caattctgcagaaggagagtacagtgcactc 5315  
|||||  
Sbjct: 4516 ggggtaactccgctgaggaactgcatac caattctgcagaaggagagtacagtgcactc 4575

Query: 5316 tgtagctatctatcttttaacctacaaattt gttcctgctcttccaggaatattgggatact 5375  
|||||  
Sbjct: 4576 tgtagctatctatcttttaacctacaaattt gttcctgctcttccaggaatattgggatact 4635

Query: 5376 gtaaggcccttgcctcagaggtggtgtgc agatcctgccttactaaactgtttgaagcaa 5435  
|||||  
Sbjct: 4636 gtaaggcccttgcctcagaggtggtgtgc agatcctgccttactaaactgtttgaagcaa 4695

Query: 5436 aaaaacaccgtggtcaggtaccctagaaa aagaaatagtttgatagagcttctgatgac 5495  
|||||  
Sbjct: 4696 aaaaacaccgtggtcaggtaccctagaaa aagaaatagtttgatagagcttctgatgac 4755

## Blast Result

Query: 5496 tatagctgcctcctgaatcaagcttctca tttcaggtgccacgggtctgcagatgatgag 5555  
|||||  
Sbjct: 4756 tatagctgcctcctgaatcaagcttctca tttcaggtgccacgggtctgcagatgatgag 4815

Query: 5556 cgaaagcatcctgtcctctgcctttttctg tggggctatactatgttctcagaacatttgc 5615  
|||||  
Sbjct: 4816 cgaaagcatcctgtcctctgcctttttctg tggggctatactatgttctcagaacatttgc 4875

Query: 5616 tgccaggaaattgtgaacggggaagaggt tggagcttgcaatttttcacgcacttcactgt 5675  
|||||  
Sbjct: 4876 tgccaggaaattgtgaacggggaagaggt tggagcttgcaatttttcacgcacttcactgt 4935

Query: 5676 ggagccggagctctgcattttctctaaaaat cagagaatgccgagtggtcctgggtgaaggt 5735  
|||||  
Sbjct: 4936 ggagccggagctctgcattttctctaaaaat cagagaatgccgagtggtcctgggtgaaggt 4995

Query: 5736 aaagccagaggctgtgcctatccagctcc ttacttggatgaatatggagaaacagaccct 5795  
|||||  
Sbjct: 4996 aaagccagaggctgtgcctatccagctcc ttacttggatgaatatggagaaacagaccct 5055

Query: 5796 ggctgaagagggggcaaccccttcattt atctcgtgagcgggtatcggaagctccatttg 5855  
|||||  
Sbjct: 5056 ggctgaagagggggcaaccccttcattt atctcgtgagcgggtatcggaagctccatttg 5115

Query: 5856 gtctggcaacaacactgcattatagaaga gattgctaggagccaagagactaatcagatg 5915  
|||||  
Sbjct: 5116 gtctggcaacaacactgcattatagaaga gattgctaggagccaagagactaatcagatg 5175

Query: 5916 ttatttggattcaactggcagttactgtg a 5945  
|||||  
Sbjct: 5176 ttatttggattcaactggcagttactgtg a 5205

Score = 1271 bits (660), Expect = 0.0

Identities = 660/660 (100%)

Strand = Plus / Plus

Query: 696 atggcggacgaggaggctggaggtactga gaggatggaaatcagcgggagttaccccag 755  
|||||  
Sbjct: 1 atggcggacgaggaggctggaggtactga gaggatggaaatcagcgggagttaccccag 60

Query: 756 acccctcagcgtctggcatcttgggtggga tcagcaagttgattttttatactgctttcttg 815  
|||||  
Sbjct: 61 acccctcagcgtctggcatcttgggtggga tcagcaagttgattttttatactgctttcttg 120

Query: 816 catcatttggcacaattgggtgccagaaat ttactttgctgaaatggaccagacttggaa 875  
|||||  
Sbjct: 121 catcatttggcacaattgggtgccagaaat ttactttgctgaaatggaccagacttggaa 180

Query: 876 aagcaggaggaaagtgtacaaatgtcaat attcactccactggaatggtaacttatttggga 935



## Blast Result

Sbjct: 181 |||||  
aagcaggaggaaagtgtacaaatgtcaat attcactcactggaatggtacttatttggga 240

Query: 936 gaagatccagatatttgottagagaaatt gaagcacagtggagcatttcagctttgtggg 995

Sbjct: 241 gaagatccagatatttgcttagagaaatt gaagcacagtggagcatttcagctttgtggg 300

Query: 996 aggggttttcaaaagtggagagacaacctt ttottgcagggattgtgcaattgatccaaca 1055

Sbjct: 301 aggggttttcaaaagtggagagacaacota ttcttgcagggtattgtgcaattgatccaaca 360

Query: 1056 tgtgtactotgtatggactgottccagga cagtgttcataaaaatcatcggttacaagatg 1115

Sbjct: 361 tgtgtactotgtatggactgcttcagga cagtgttcataaaaaatcatcgttacaagatg 420

Query: 1116 catacttctactggaggagggttctgtga ctgtggagacacagaggcatggaaaactggc 1175

Sbjct: 421 catacttctactggaggagggttctgtga ctgtggagacacagaggcatggaaaactggc 480

Query: 1176 cctttttgtgtaaatcatgaacctggaag agcaggtactataaaaagagaattcacgctgt 1235

Sbjct: 481 ccttttgtgttaaatacatgaacctggaag agcaggtactataaaaagagaattcacgctgt 540

Query: 1236 ccgttgaatgaagaggttaattgtccaagc caggaaaatatttccttcagtgataaaaatat 1295

Sbjct: 541 cccgttgaaatgaagaggtaattgtccaaagc caggaaaatatttccttcagtgataaaaatat 600

Query: 1296 gtcgtagaaatgactatatgggaagagga aaaagaactgcctcctgaactccagataagg 1355

Sbjct: 601 gtcgtagaaatgactatatgggaagagga aaaagaactgcctcctgaactccagataagg 660

```

CPU time:      0.17 user secs.      0.04 sys. secs      0.21 total secs.

```

Lambda	K	H
1.33	0.621	1.13

Gapped			
Lambda	K	H	
1.33	0.621	1.13	

```
Matrix: blastn matrix:1 -2
Gap Penalties: Existence: 5, Extension: 2
Number of Hits to DB: 31
Number of Sequences: 0
Number of extensions: 31
Number of successful extensions: 6
Number of sequences better than 10000.0: 1
length of query: 5205
length of database: 7,880,065,999
effective HSP length: 26
effective length of query: 5179
effective length of database: 7,880,065,973
effective search space: 40810861674167
effective search space used: 40810861674167
T: 0
```

Received from <3124741159> at 5/27/03 9:43:31 PM [Eastern Daylight Time]

2/24/2003

MAY.27.2003 8:57PM

MARSHALL GERSTEIN

NO.942

P.36/40

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# Blast Result

A: 0

X1: 6 (11.6 bits)

X2: 25 (48.1 bits)

S1: 12 (23.8 bits)

S2: 17 (33.4 bits)

Blast Result



## Blast 2 Sequences results

PubMed

Entrez

BLAST

OMIM

Taxonomy

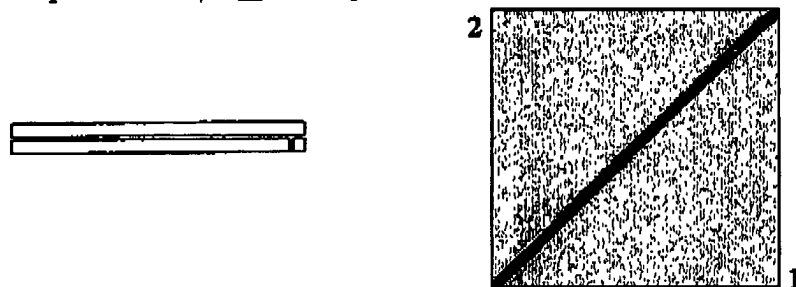
Structure

## BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.4 [Aug-26-2002]

Matrix: BLOSUM62 gap open: 11 gap extension: 1  
 x\_dropoff: 50 expect: 10000 wordsize: 3 Filter ☐ None

Sequence 1 lc|seq\_1 Length 1749 (1 .. 1749)

Sequence 2 lc|seq\_2 Length 1734 (1 .. 1734)



NOTE: The statistics (bitscore and expect value) is calculated based on the size of nr database

Score = 3500 bits (9076), Expect = 0.0

Identities = 1728/1749 (98%), Positives = 1728/1749 (98%), Gaps = 20/1749 (1%)

```

Query: 1  MADEEAGGTERMEISAEIPQTPQRLASWW DQQVDFYTAFLHHLAQLVPEIYFAEMDPDL 60
        MADEEAGGTERMEISAEIPQTPQRLASWW DQQVDFYTAFLHHLAQLVPEIYFAEMDPDL 65
Sbjct: 6  MADEEAGGTERMEISAEIPQTPQRLASWW DQQVDFYTAFLHHLAQLVPEIYFAEMDPDL 65

Query: 61  KQESVQMSIFTFLEWYLFGEDEPDICLEK LKHSGAFQLCGRVFKSGETTYSCRDCAIDPT 120
        KQESVQMSIFTFLEWYLFGEDEPDICLEK LKHSGAFQLCGRVFKSGETTYSCRDCAIDPT 125
Sbjct: 66  KQESVQMSIFTFLEWYLFGEDEPDICLEK LKHSGAFQLCGRVFKSGETTYSCRDCAIDPT 125

Query: 121  CVLCMDCFQDSVHKNHRYKMHSTSTGGGFC DCGDTEAWKTGPFVCVNHEPGRAGTIKENSRC 180
        CVLCMDCFQDSVHKNHRYKMHSTSTGGGFC DCGDTEAWKTGPFVCVNHEPGRAGTIKENSRC 185
Sbjct: 126  CVLCMDCFQDSVHKNHRYKMHSTSTGGGFC DCGDTEAWKTGPFVCVNHEPGRAGTIKENSRC 185

Query: 181  PLNEEVIVQARKIFPSVIKYVVENTIWE EKELPPELQIREKNERYYCVLFNDEHHSYDH 240
        PLNEEVIVQARKIFPSVIKYVVENTIWE EKELPPELQIREKNERYYCVLFNDEHHSYDH 245
Sbjct: 186  PLNEEVIVQARKIFPSVIKYVVENTIWE EKELPPELQIREKNERYYCVLFNDEHHSYDH 245

Query: 241  VIYSLQALDCELAEAQLHTTAIDKEGRR AVKAGAYAACQEAKEDIKSHSENVSQHPLHV 300
        VIYSLQALDCELAEAQLHTTAIDKEGRR AVKAGAYAACQEAKEDIKSHSENVSQHPLHV 305
Sbjct: 246  VIYSLQALDCELAEAQLHTTAIDKEGRR AVKAGAYAACQEAKEDIKSHSENVSQHPLHV 305

Query: 301  EVLHSEIMAHQKFALRLGSMWNKIMSYSS DFRQIFCQACLREEPDSENPCILSRMLWDA 360
        EVLHSEIMAHQKFALRLGSMWNKIMSYSS DFRQIFCQACLREEPDSENPCILSRMLWDA 365
Sbjct: 306  EVLHSEIMAHQKFALRLGSMWNKIMSYSS DFRQIFCQACLREEPDSENPCILSRMLWDA 365

Query: 361  KLYKGARKILHELIFSSFFMEMEYKKLFA MEFVKYKQLQKEYISDDHDSISITALSVQ 420
        KLYKGARKILHELIFSSFFMEMEYKKLFA MEFVKYKQLQKEYISDDHDSISITALSVQ 425
Sbjct: 366  KLYKGARKILHELIFSSFFMEMEYKKLFA MEFVKYKQLQKEYISDDHDSISITALSVQ 425

Query: 421  MFTVPTLARHLIEONVISVITETLLEVL PEYLDNRNKNFQGYSDKLG RVYAVICDLK 480

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## Blast Result

Sbjct: 426 MFTVPTLARHLIEQNVISVITETLLEVL PEYLDNRNKNFNFQGYSDKLG RVYAVICDLK 485

Query: 481 YILISKPTIWTTERLRMQFLEGFRSFLKIL TCMQGMEEIRRVQVGHIEVDPDWEAAIAIQM 540  
YILISKPTIWTTERLRMQFLEGFRSFLKIL TCMQGMEEIRRVQVGHIEVDPDWEAAIAIQM 540

Sbjct: 486 YILISKPTIWTTERLRMQFLEGFRSFLKIL TCMQGMEEIRRVQVGHIEVDPDWEAAIAIQM 545

Query: 541 QLKNILLMFQEWACDEBLLLVAYKECHK AVMRCSSTFISSSKT VVQSCGHSLET KSYRV 600  
QLKNILLMFQEWACDEBLLLVAYKECHK AVMRCSSTFISSSKT VVQSCGHSLET KSYRV 600

Sbjct: 546 QLKNILLMFQEWACDEBLLLVAYKECHK AVMRCSSTFISSSKT VVQSCGHSLET KSYRV 605

Query: 601 SEDLVSIHLP LSR TLAGLHVRLSRLGAVS RLHEFVSFEDFQVEVLVEYPLRCLVLVAQVV 660  
SEDLVSIHLP LSR TLAGLHVRLSRLGAVS RLHEFVSFEDFQVEVLVEYPLRCLVLVAQVV 660

Sbjct: 606 SEDLVSIHLP LSR TLAGLHVRLSRLGAVS RLHEFVSFEDFQVEVLVEYPLRCLVLVAQVV 665

Query: 661 AEMWRRNGLSLISQVFFYQDV KCREEMYD KDIIMLQIGASLMDPNKFLLLV LQRYELAEA 720  
AEMWRRNGLSLISQVFFYQDV KCREEMYD KDIIMLQIGASLMDPNKFLLLV LQRYELAEA 720

Sbjct: 666 AEMWRRNGLSLISQVFFYQDV KCREEMYD KDIIMLQIGASLMDPNKFLLLV LQRYELAEA 725

Query: 721 FNKTISTKDQDLIKQYNTLIEEMLQVLIY IVGERYVPGVGNVTKEEVTMREI IHLLCIEP 780  
FNKTISTKDQDLIKQYNTLIEEMLQVLIY IVGERYVPGVGNVTKEEVTMREI IHLLCIEP 780

Sbjct: 726 FNKTISTKDQDLIKQYNTLIEEMLQVLIY IVGERYVPGVGNVTKEEVTMREI IHLLCIEP 785

Query: 781 MPHSAIAKNLPENENNETGLE NVINKVAT FKKPGVSGHGVYELKDESLKDFNMYFYHYSK 840  
MPHSAIAKNLPENENNETGLE NVINKVAT FKKPGVSGHGVYELKDESLKDFNMYFYHYSK 840

Sbjct: 786 MPHSAIAKNLPENENNETGLE NVINKVAT FKKPGVSGHGVYELKDESLKDFNMYFYHYSK 845

Query: 841 TQHSKAEHMQKRRKQENKDEALPPPPPEFCP AF SKVINL LNCDIMMYILRTVFERAID 900  
TQHSKAEHMQKRRKQENKDEALPPPPPEFCP AF SKVINL LNCDIMMYILRTVFERAID 900

Sbjct: 846 TQHSKAEHMQKRRKQENKDEALPPPPPEFCP AF SKVINL LNCDIMMYILRTVFERAID 905

Query: 901 TDSNLWTEGMLQMAFHILA GLLEEKQQL QKAPEEEVTFDFYHKASRLGSSAMNIQMLLE 960  
TDSNLWTEGMLQMAFHILA GLLEEKQQL QKAPEEEVTFDFYHKASRLGSSAMNIQMLLE 960

Sbjct: 906 TDSNLWTEGMLQMAFHILA GLLEEKQQL QKAPEEEVTFDFYHKASRLGSSAMNIQMLLE 965

Query: 961 KLKGIPQLEGQKDMITWILQMFDTVKRLR EKSCLIVATTSGSESIKND EITHDKEKAERK 1020  
KLKGIPQLEGQKDMITWILQMFDTVKRLR EKSCLIVATTSGSESIKND EITHDKEKAERK 1020

Sbjct: 966 KLKGIPQLEGQKDMITWILQMFDTVKRLR EKSCLIVATTSGSESIKND EITHDKEKAERK 1025

Query: 1021 RKAEEARLHRQKIM AQMSALQKNFIETHK LMYDNTSEMPGKEDSIMEEESTPAVSDYSRI 1080  
RKAEEARLHRQKIM AQMSALQKNFIETHK LMYDNTSEMPGKEDSIMEEESTPAVSDYSRI 1080

Sbjct: 1026 RKAEEARLHRQKIM AQMSALQKNFIETHK LMYDNTSEMPGKEDSIMEEESTPAVSDYSRI 1085

Query: 1081 ALGPKRGPSVTEKEVLT CILCQEEQEVKI ENNAMVLSACVOKSTALTQHRGKPIELSGEA 1140  
ALGPKRGPSVTEKEVLT CILCQEEQEVKI ENNAMVLSACVOKSTALTQHRGKPIELSGEA 1140

Sbjct: 1086 ALGPKRGPSVTEKEVLT CILCQEEQEVKI ENNAMVLSACVOKSTALTQHRGKPIELSGEA 1145

Query: 1141 LDPLFMDPD LAYGTYTGSCGHVMH AVCWQ KYFEAVQLSSQQR IHVDLFDLESGEYLCPLC 1200  
LDPLFMDPD LAYGTYTGSCGHVMH AVCWQ KYFEAVQLSSQQR IHVDLFDLESGEYLCPLC 1200

Sbjct: 1146 LDPLFMDPD LAYGTYTGSCGHVMH AVCWQ KYFEAVQLSSQQR IHVDLFDLESGEYLCPLC 1205

Query: 1201 KSLCNTVIP IIP LQPQKINSENADALAQL LTLARWIQT V LARISGYNIRHAKGENPIPIF 1260  
KSLCNTVIP IIP LQPQKINSENADALAQL LTLARWIQT V LARISGYNIRHAKGENPIPIF 1260

Sbjct: 1206 KSLCNTVIP IIP LQPQKINSENADALAQL LTLARWIQT V LARISGYNIRHAKGENPIPIF 1265

Query: 1261 FNQGMGDS TLEFHSILSFGV ESSI KYSNS IKEMVILFATTIYRIGLKVP PDERDPRVPML 1320  
FNQGMGDS TLEFHSILSFGV ESSI KYSNS IKEMVILFATTIYRIGLKVP PDERDPRVPML 1320

Sbjct: 1266 FNQGMGDS TLEFHSILSFGV ESSI KYSNS IKEMVILFATTIYRIGLKVP PDERDPRVPML 1325

Query: 1321 TWSTCAFTIQAIENLLGDEGKPLFGALQN RQHNGLKALMQFAVAQRITCPQVLIQKHLVR 1380  
TWSTCAFTIQAIENLLGDEGKPLFGALQN RQHNGLKALMQFAVAQRITCPQVLIQKHLVR 1380

Sbjct: 1326 TWSTCAFTIQAIENLLGDEGKPLFGALQN RQHNGLKALMQFAVAQRITCPQVLIQKHLVR 1385

## Blast Result

Query: 1381 LLSVVLPNIKSEDTPCLLSIDLFHVLVGA VLAFFPSLYWDDPVDLQPSVSSSYNHLYLEFH 1440  
 LLSVVLPNIKSEDTPCLLSIDLFHVLVGA VLAFFPSLYWDDPVDLQPSVSSSYNHLYLEFH  
 Sbjct: 1386 LLSVVLPNIKSEDTPCLLSIDLFHVLVGA VLAFFPSLYWDDPVDLQPSVSSSYNHLYLEFH 1445

Query: 1441 LITMAHMLQILLTVDTGFLPAQVQEDSEE AHSASSFFAEISQYTSIGCDIPGWYLWVS 1500  
 LITMAHMLQILLTVDTGFLPAQVQEDSEE AHSASSFFAEISQYTSIGCDIPGWYLWVS  
 Sbjct: 1446 LITMAHMLQILLTVDTGFLPAQVQEDSEE AHSASSFFAEISQYTSIGCDIPGWYLWVS 1505

Query: 1501 LKNGITPYLRCAALFFHYLLGVTPPEELH TNSAEGEYSALCSYLSLPTNLFLLFQEYWDT 1560  
 LKNGITPYLRCAALFFHYLLGVTPPEELH TNSAEGEYSALCSYLSLPTNLFLLFQEYWDT  
 Sbjct: 1506 LKNGITPYLRCAALFFHYLLGVTPPEELH TNSAEGEYSALCSYLSLPTNLFLLFQEYWDT 1565

Query: 1561 VRPLLQRCADPALLNCLKQKNTVVRYPR KRNSLIELEDDYSCLLNQASHFRCPRSADDE 1620  
 VRPLLQRCADPALLNCLKQKNTVVRYPR KRNSLIELEDDYSCLLNQASHFRCPRSADDE  
 Sbjct: 1566 VRPLLQRCADPALLNCLKQKNTVVRYPR KRNSLIELEDDYSCLLNQASHFRCPRSADDE 1625

Query: 1621 RKHPVLCLFCGAILCSQNICCQEIIVNGEE VGACIFHALHCGAGVCIFLKIRECRVVLVEG 1680  
 RKHPVLCLFCGAILCSQNICCQEIIVNGEE VGACIFHALHC  
 Sbjct: 1626 RKHPVLCLFCGAILCSQNICCQEIIVNGEE VGACIFHALHC----- 1665

Query: 1681 KARGCAYPAPYLDYGETDPGLKRGNPLH LSRERYRKLHLVWQQHCHIEEARSQETNQM 1740  
 KARGCAYPAPYLDYGETDPGLKRGNPLH LSRERYRKLHLVWQQHCHIEEARSQETNQM  
 Sbjct: 1666 KARGCAYPAPYLDYGETDPGLKRGNPLH LSRERYRKLHLVWQQHCHIEEARSQETNQM 1725

Query: 1741 LFGFNWQLL 1749  
 LFGFNWQLL  
 Sbjct: 1726 LFGFNWQLL 1734

CPU time: 0.59 user secs. 0.04 sys. secs 0.63 total secs.

Lambda K H  
 0.321 0.136 0.411

Gapped  
 Lambda K H  
 0.267 0.0410 0.140

## Matrix: BLOSUM62

Gap Penalties: Existence: 11, Extension: 1  
 Number of Hits to DB: 29,922  
 Number of Sequences: 0  
 Number of extensions: 2080  
 Number of successful extensions: 6  
 Number of sequences better than 10000.0: 1  
 Number of HSP's better than 10000.0 without gapping: 1  
 Number of HSP's successfully gapped in preliminary test: 0  
 Number of HSP's that attempted gapping in preliminary test: 0  
 Number of HSP's gapped (non-prelim): 1  
 length of query: 1734  
 length of database: 429,858,829  
 effective HSP length: 141  
 effective length of query: 1593  
 effective length of database: 429,858,688  
 effective search space: 684764889984  
 effective search space used: 684764889984  
 T: 9  
 A: 40  
 X1: 16 ( 7.4 bits)  
 X2: 129 (49.7 bits)  
 X3: 129 (49.7 bits)  
 S1: 41 (21.9 bits)  
 S2: 56 (26.2 bits)

MAY.27.2003 8:59PM MARSHALL GERSTEIN

NO.942 P.40/40  
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Blast Result

Received from <3124741159> at 5/27/03 9:43:31 PM [Eastern Daylight Time] gi?

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2/24/2003